M1035/0042
Leslie
Paul
7372

STAKER | PARSON
COMPANIES

RECEIVED
MAY 19 2016
DIV. OF OIL, GAS & MINING

May 19, 2016

Paul Baker
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114

Re: Staker Parson Companies Beef Hollow Quarry addition of mineral right information.

Dear Mr. Baker:

Staker & Parson Companies is providing the Division of Oil, Gas and Mining 2 copies of an updated NOI that includes mineral right ownership as requested by DOGM. Please replace the existing NOI's with the attached document. Please keep in place all Appendices and Figures.

Please let me know what questions you may have.

Sincerely,

Staker & Parson Companies

Michael Dalley
Mountain West Division Sustainability Director

THE PREFERRED SOURCE

PH 801-871-6600
FAX 801-871-6869
www.stakerparson.com
89 West 13490 South, Suite 100, Draper, UT 84020

7372

Notice of Intention (NOI)

To Commence a Large Mining Operation

STAKER | PARSON
COMPANIES

Beef Hollow Facility

DOGM Permit Number M/035/0042

Prepared and Submitted By:

Staker Parson Companies (Revised 5/19/16)

89 West 13490 South, Suite 100

Draper, Utah 84020

To:

Utah Division of Oil, Gas and Mining

1594 West North Temple, Suite 1210

Salt Lake City, Utah 84114

Table of Contents

R647-4 Large Mining Operations

R647-4-101 Filing Requirements and Review Procedures

This Notice of Intent (NOI) to commence a Large Mining Operation is submitted to the Utah Division of Oil, Gas and Mining (DOGM). In an effort to comply with the rules and regulations of mining operations, Staker Parson Companies (the Operator) submits this NOI in compliance with R647-4 of the Utah Minerals Reclamation Program.

The proposed large mining operation is geographically located in Herriman, Utah and also being located in Salt Lake County. The large mine will consist of multiple land lease agreements between the property owners and the Operator. The Operator understands the filing requirements and review procedures necessary to complete this NOI.

R647-4-102 Duration of the NOI

The Operator understands when approved, the NOI, including any amendments or revisions will be valid for the life of the mining operation. The Operator also understands that DOGM may review the permit, and require updated information and modifications when necessary.

R647-4-103 Notice of Intention to Begin Large Mine Operations

The Operator's NOI addresses the requirements of the rules listed in this section as follows:

104 – Operator(s), Surface and Mineral Owners

105 – Maps, Drawings, and Photographs

106 – Operation Plan

108 – Hole Plugging Requirements

109 – Impact Assessment

110 – Reclamation Plan

112 – Variance

113 – Surety

R647-4-104 Operator, Surface and Mineral Owners

Operator: Staker Parson Companies (Operator)

Mine Name: Beef Hollow Facility

Type of Business: Corporation

Utah Business Entity No.: 4910822-0142

Registered Agent: CT Corporation

1108 East South Union Avenue

Midvale, UT 84047

Phone: 801-364-5101

Company Officers: Scott W. Parson – President

John Parson – Director

Jared Hyde – Secretary

Jared Hyde - Treasurer

Operators Permanent Address: 89 West 13490 South, Suite 100

Draper, UT 84020

Phone: 801-871-6600

Fax: 801-871-6869

Web Site: www.stakerparson.com

Contact Person for NOI: Mike Dalley (Operator)

89 West 13490 South, Suite 100

Draper, UT 84020

Phone: 801-871-6600

Fax: 801-871-6869

Email: mdalley@stakerparson.com

Location of Operation: T4S, R1W, Sec. 16, 17, 18, 19, 20, 21, SLBM

Ownership of Land Surface and Record of Minerals:

Parcel Number	Land Owner	Last Known Address	Mineral Owner	Last Known Address
33-21-200-012	Criner, Janet & Wheadon, Douglas	Douglas A. Weadon and Janet W. Criner, as Trustees, 2789 W. 10000 S., South Jordan, UT 84095 801-350-9004	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-21-200-004	Cr Criner, Janet & Wheadon, Douglas	Douglas A. Weadon and Janet W. Criner, as Trustees, 2789 W. 10000 S., South Jordan, UT 84095 801-350-9004	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-21-100-002	Cr Criner, Janet & Wheadon, Douglas	Douglas A. Weadon and Janet W. Criner, as Trustees, 2789 W. 10000 S., South Jordan, UT 84095 801-350-9004	Cr Criner, Janet & Wheadon, Douglas	Douglas A. Weadon and Janet W. Criner, as Trustees, 2789 W. 10000 S., South Jordan, UT 84095 801-350-9004
33-21-200-014	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-21-100-022	Staker Parson Companies	Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600
33-20-200-009	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-21-100-024	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-20-100-003	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600

33-19-200-002	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600
33-21-100-025	Bank of Utah	2605 Washington Blvd, Ogden, UT 84401 801-409-5000	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-20-200-006	Bank of Utah	2605 Washington Blvd, Ogden, UT 84401 801-409-5000	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-21-100-019	Bank of Utah	2605 Washington Blvd, Ogden, UT 84401 801-409-5000	State of Utah	675 500 S #500, Salt Lake City, UT 84102 (801) 538-5100
33-17-400-013	Bank of Utah	2605 Washington Blvd, Ogden, UT 84401 801-409-5000	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600
33-16-300-033	Bank of Utah	2605 Washington Blvd, Ogden, UT 84401 801-409-5000	Trustee of the Irrevocable Jack W. Kunkler Trust A	Attn: Craig A Standing, 200 East South Temple #210, SLC, UT 84111 801-924-3616
33-20-100-004	Bank of Utah	2605 Washington Blvd, Ogden, UT 84401 801-409-5000	Staker Parson Companies	Staker Parson Companies, 89 W. 13490 S. Draper, UT 84020 801-871-6600
33-16-300-039	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-16-300-032	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Dora M. Mower	1883 S. 900 E. SLC, UT 84105
33-16-300-038	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Dora M. Mower	1883 S. 900 E. SLC, UT 84105
33-16-300-031	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT

		84095 801-216-4773		84095 801-216-4773
33-16-300-030	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-16-300-037	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Harold D. Beardon	1671 East 8640 South, SLC, UT 84105 (801) 255-0581
33-16-300-036	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-17-400-012	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-17-400-014	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	The Federal Land Bank of Berkeley (1/2 interest) Wasatch South Hills Co, LLC (1/2 Interest)	2180 Milvia St, Berkeley, CA 94704 1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-17-400-011	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-17-300-003	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773	Wasatch South Hills Co, LLC	1099 W. South Jordan Parkway, South Jordon, UT 84095 801-216-4773
33-18-400-005	Malibu Investment Company	2020 East 3300 South #26, SLC, UT 84109 801-484-6157	Malibu Investment Company	2020 East 3300 South #26, SLC, UT 84109 801-484-6157
33-19-200-001	Malibu Investment Company	2020 East 3300 South #26, SLC, UT 84109 801-484-6157	Malibu Investment Company	2020 East 3300 South #26, SLC, UT 84109 801-484-6157

Federal Mining Claim Numbers, Lease Numbers, or Permit Numbers, of any Mining Claims, or Federal or State Leases or Permits Included in the Land Affected:

The agreements the Operator has with the Lessors of the property do not include the use of any of their mineral rights. The Operator is acting solely on the grounds of hard rock/sand and gravel processing. These operations do not fall under the mineral processing/mineral claims requirements.

Adjacent Land Owners:

Laguna Investment Company:

2688 Wanda Way

Salt Lake City, UT 84117

Phone: 801-971-3650

Camp Williams Department of Public Works

Lieutenant Colonel Chris M. Filoso UTARNG

17800 Camp Williams Road

Riverton, UT 84065

801-878-5404

South Farm LLC:

4393 Riverboat Road, Suite 450

Salt Lake City, UT 84123

Phone: 801-461-9710

Shirley Butterfield:

6237 West 13100 South

Herriman, UT 84096

Phone: 801-254-0376

Salt Lake County Water Conservancy District:

P.O. Box 70

West Jordan, UT 84084

Phone: 801-559-1500

Utah Department of Transportation:

P.O. Box 148240

Salt Lake City, UT 84414

Phone: 801-965-4173

Curtis McDougal:

11576 South State Street, Suite 102 B

Draper, UT 84020

Phone: 801-898-2299

Jordan Valley Water Conservancy District:

8215 South 1300 West

West Jordan, UT 84088

Phone: 801-256-4401

Does the Permittee/Operator Have Legal Right to Enter and Conduct Mining Operations on the Land covered by this notice?

Yes

R647-4-105 Maps, Drawings, and Photographs

105.1 Base Maps: Figures 1&2:

Figure 1: Base and Mine Location Map

This topographic map shows the mine area and property boundaries printed at a scale of 1" = 3000 ft. It shows streams, springs, water bodies, roads, buildings, and utilities within 500 feet of the proposed mining operation.

Figure 2: Land Ownership Map

This topographic Map is printed at a scale of 1" = 1200 ft. This map shows the property boundaries, surface ownership of the mine, adjacent lands, and access routes.

105.2 Surface Facilities, Contours, Disturbance, Bonded Area, Geology, and Phasing Maps: Figures 3-8:

Figure 3: Surface Facilities Map

Existing surface facilities are shown on this map at a scale of 1"=1000ft.

Figure 4: Pre-Existing Contours Map

Pre-Existing Contours are shown on this map at a scale of 1"=1000ft.

Figure 5: Pre-Existing Disturbance Map-Small Mine

Pre-Existing Disturbances are shown on this map at a scale of 1"=1000ft.

Figure 6: Geology Map

Geology is shown on this map at a scale of 1"=2000ft.

Figure 7: Mining Phases Map

Mining Phases are shown on this map at a scale of 1"=1000ft.

105.3 Additional Maps:

Figure 8: Existing Drainage and Future Erosion Control Map

Existing Drainage and Erosion Control are shown on this map at a scale of 1"=1000ft.

Figure 8A: Existing Drainage and Future Erosion Control Map - Expanded

Existing Drainage and Erosion Control are shown on this map at a scale of 1"=1500ft.

Figure 9: Final Contours with Profile Sections Overview

Final Contours are shown on this map at a scale of 1"=1000ft.

Figure 10: Profile Sections A-A' – D-D'

Contours A-A' – D-D' are shown on this map at a scale of 1"=300ft.

Figure 11: Profile Sections E-E' – G-G'

Contours E-E' – G-G' are shown on this map at a scale of 1"=300ft.

Figure 12: Profile Sections H-H' – J-J'

Contours H-H' – J-J' are shown on this map at a scale of 1"=300ft.

105.4 Photographs Showing the General Appearance and Condition of the site:

Recent photographs taken are included in Appendix A.

105.5 Copies of Underground and surface Mine Development Maps

No underground mining will occur on this site.

R647-4-106 Operational Plan

106.1 Types of Mineral to be Mined:

There are two types of minerals which will be mined at the Beef Hollow Facility, ortho-quartzite and volcanic rock.

106.2 Types of Operations to be Conducted:

Operations at the Beef Hollow Facility will primarily consist of drilling, blasting, crushing, and sizing into construction grade materials for use on construction projects. Aggregate Crushing Facilities will be placed on the property at various locations. It is not expected any deleterious or acid forming materials will be present on site, or left on site as a result of mining.

Mining Operation:

Mined material will be drilled and blasted, possibly at several different locations. The broken up aggregate will be removed from the mining area and transported to a processing area by loader or haul truck.

Crushing Operation:

Once the aggregate is brought to the processing area, it will be fed to a primary crushing jaw to reduce the size of the aggregate, fed to a primary screen, and then proceed to a secondary crusher. Once through the secondary crusher the aggregate will go to a secondary screen. All oversized material from the secondary screen will then be re-routed back through the secondary crusher. This is a typical crushing set-up, but crushing set-ups will vary depending upon the type and quality of aggregate wanted.

Blasting Practices:

Blasting will be performed by qualified contractors. The contractors have been trained in proper safety and design methods. Proper notification will be given to all on-site personal prior to a blast. Notification of blasting will also be to adjoining land owners if requested. If deemed necessary, seismograph monitoring equipment will be placed in locations sensitive to blasting. The Operator will follow the National standards set forth for blasting and vibration.

A typical blast includes primers, boosters, detonator cord, and ammonium nitrate-fuel oil pellets (ANFO). Components of blasting will not be stored on-site, but will be delivered to

the site within a 24 hour period prior to blasts. A typical blast design will consist of 50 to a 125 holes at depths of 15 to 50 feet.

During hole loading a blast zone will be delineated and only authorized personnel will be allowed access into the blasting zone. This area will be monitored by the contractor and the Operator. Once all holes are loaded and prepared, the Operator and the contractor will locate to a safe zone. A siren will sound 5 minutes prior to the blast. Another siren will sound at the 1 minute mark. Once the contractor and the Operator are assured the area is safe, the explosive materials will be detonated. No one will enter the blast zone until the contractor has confirmed the site is clear.

Concurrent Reclamation:

The mining plan submitted will detail mining operations to progress in a manner that will best benefit the land owners of the Beef Hollow Facility. Ideas going forward are to mine and grade the area that will best support future residential building and roads. At this time concurrent reclamation is not being considered as various areas of the mine will need to be accessed and exposed. In the cases of the main haul road constuction/modification, some stabilization of slopes will occur. Extreme consideration will be given to the mining area to maintain as much natural vegetation as possible to limit exposed soils/areas.

106.3 Estimated Acreage:

There is presently 200 acres of disturbed area, including previous mining disturbance prior to Staker Parson Companies ownership. For current and future mining, it is estimated 352 acres will be disturbed. This figure includes all access roads, storage piles, processing areas and mine areas. The Operator estimates 10 to 15 acres per year will be disturbed in the next 5 years (new escalation time period). In 5 years the estimated disturbed area will be 215 acres. A future mining area of 220 acres is also available, but is not currently bonded and is not expected to be mined until 2035.

Table 1: Areas estimated to be affected during the life of the Mine

Location	Total Disturbed Acres	Description and Notes	Cubic Yards of Topsoil Salvaged
Prior Mine Disturbance	79	Pre-Existing Mining Disturbance	2000
Areas of New Mining Disturbance	121	Since Staker Parson Companies acquired mine from CMC in 2010	455,000
Overburden and Waste Dumps	Inside Current Disturbance	Various Locations	N/A
Ore and Product Stockpiles	Inside Current Disturbance	Various Locations	N/A

Topsoil Stockpiles	Inside Current Disturbance	Various Locations	2500
Facility Locations	Inside Current Disturbance	Crushing Operations	N/A
Sediment Control Ponds	13.7 acres	See Figure 8	N/A
Total Disturbance – Life of Mine	352	20 plus years	660,000

106.4 Nature of material, including waste rock/overburden, and estimated tonnage:

The annual amount of mined materials will be greatly dependent upon market demand of aggregate materials. The current Utah State Air Quality Permit allows 1,500,000 tons of processed materials, and 500,000 tons of bank run material. Also, there are several lease agreements with property owners requiring a certain minimum of tons to be mined from their respective properties each year.

There are 2 types of material being mined on this site. Type 1 is made up largely of volcanic rock and alluvial materials. There are some volcanic solid outcroppings on the surface form lava flows, but below consists of sands, small gravels, and medium size gravels deposited from Lake Bonneville. Overburden depth in these areas average 6 in. Type 2 is found as hard rock that requires blasting prior to material handling. Overburden depth in these areas range from 2 in. to 1 in.

Prior Disturbance due to Historic Mining:

Mining has occurred on lands located within the proposed mining plan and is estimated to be 79 acres. Historic mining consisted of actual material removal and processed, along with removal of boulders located on the surface from landscape companies. If any of the areas of prior disturbance are again disturbed by mining operations performed by the Operator, these areas will be reclaimed by the Operator.

106.5 Soils:

The majority of land within the mining boundaries has an average of 6 inches of topsoil. All topsoil will be stripped and stored in designated topsoil storage areas. Samples were collected on May 18th, 2009 from 7 different locations, at depths up to 8 inches were collected. In total 7 samples were taken to the Brigham Young University Soil Testing Laboratory. Analytical sampling results are shown in Table 2 below:

Table 2: Analytical Soil Sample Results (May 18th, 2009)

Soil Parameter	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Units
Texture	Loam	Sandy Loam	Loam	Clay Loam	Clay	Clay Loam	Sandy Clay Loam	Uniform Soil Class.
pH	7.36	7.90	7.26	7.31	6.44	7.20	7.23	@25° C, pH Units
% Silt	35.80	27.80	29.44	28.44	34.44	34.80	27.80	As a %
% Clay	26.20	19.20	20.56	39.56	48.56	27.20	23.20	As a %
% Sand	38.00	53.00	50.00	32.00	17.00	38.00	49.00	As a %
Nitrate/Nitrogen	33.50	4.55	2.37	3.84	2.04	7.42	4.29	ppm
Phosphorous	27.64	56.64	16.17	7.16	2.74	23.99	12.72	ppm
Potassium	480.00	230.40	262.40	243.2	134.40	332.80	201.60	ppm
Salinity	3.5	2.2	0.45	0.69	0.41	0.51	0.43	mg/l
Iron	9.80	17.00	4.52	2.60	3.98	3.96	4.14	ppm
Calcium SAR	232.00	386.56	24.48	60.96	15.68	38.72	28.96	ppm
SAR	5.42	0.75	1.89	1.94	1.84	0.96	1.10	ppm
Magnesium SAR	103.84	98.88	7.52	10.08	7.52	11.36	8.64	ppm
Sodium SAR	396.80	64.32	41.76	62.24	35.52	26.56	26.40	ppm
% Organic	5.32	2.47	1.09	2.25	1.37	1.83	1.35	As a %

The analytical results from the topsoil testing show the materials to be well suited for plant growth.

Information obtained from the United States Department of Agriculture Website (Appendix G) has shown the following soils located on the mine site.

Bradshaw-Agassiz Association:

This unit is found at elevations ranging from 6,000 to 8,500 feet in elevation where the mean annual precipitation is 18 to 25 inches and the mean annual air temperature is approximately 45° F. The unit is found on mountain slopes and is a colluviums derived from limestone, sandstone, and shale. The soil drains well and is non-saline with no flooding frequency on record.

Butterfield Extremely Stony Loam:

This soil type encompasses the majority of the Beef Hollow Operation, and exists at elevations ranging from 5,200 to 7,000 feet. The mean annual precipitation is 17 to 20 inches per year with an average air temperature at 48° F. Butterfield is found primarily on mountain slopes of 5 to 50% and is well drained. This unit is classified as Upland Stoney Loam.

Bingham Extremely Stoney Loam:

This soil type is situated at 4,350 to 5,200 feet and is frost free for approximately 180 days per year. This soil is closely similar to the Bingham and Horrocks units which combined compose 95% of the Beef Hollow Operations. The setting is alluvial fans, lake terraces and the parent material is gravelly alluvium. Hillside slopes are generally 3 to 10% and the material is well drained. The upper 6 inches consists of stony loam and gravelly loam.

Horrocks Extremely Stoney Loam:

Occurring at elevations between 5,000 to 7,000 feet on mountain slopes, this soil is well drained and consists primarily of colluviums and/or residuum. The textures range from stony loams to extremely stony sandy loam material depending on the geographical location.

In general, the soils found on site are a representation of stony loams. The organic content and existing vegetative communities do well with these existing soils.

106.6 Plans for Protecting and Re-Depositing Soils:

It is estimated that 30 additional acres of mining disturbance will occur over the next 10 years. The Operator estimates 15 acres additional disturbance in the next 5 years, and depending on the location of mining each year, actual soil salvage by year may be more or less than that estimated. The operator estimates a total of 455,000 cubic yards of topsoil will be needed over the next 5 years. Every effort will be made to salvage topsoils for later use of reclamation. Redepostion of soils during reclamation will be spread at a depth of 12 inches.

More detail on topsoil stripping and protection is included in Sub-section 109.3

106.7 Existing Vegetative Communities to Establish Re-Vegetation Success:

The NRCS range data for the Beef Hollow operation concerning existing vegetative communities and cover levels can be found in Appendix D. This survey was conducted by CMC Rock Products on June 25, 2009. The original report is not available but a copy is provided. There are 4 distinct ecological sites identified within the boundary: Mountain Stoney Loam, Mountain Shallow Loam, Upland Stoney Loam, and Upland Gravelly Loam. These ecological sites have been researched and are found very similar to existing site conditions.

Table 3: Expected Plant Species to be found at the Beef Hollow Site:

Grasses	
Common Name	**National Symbol**
Blue Bunch Wheatgrass	PSSP6
Nevada Bluegrass	PONE3
Needleandthread	HECO26
Great Basin Wild Rye	LEC14
Bulbous Bluegrass	MEBU
Bottlebrush Squirrel Tail	ELELS
Blue Gama	BOGR2

Forbes	
Common Name	**National Symbol**
Low Penstemon	PEHU
Phlox	PHLO2
Meadow Thistle	CISC2
Hawksbeard	CRAC2
Parsley	LOGR

Northern Mulesears	WYAM
Torrey Milkvetch	ASCA9

Shrubs	
Common Name	**National Symbol**
Mountain Big Sagebrush	ARTRV
Bitterbrush	PUTR2
Slender Wild Buckwheat	ERMI4
Low Rabbitbrush	CHVI8
Broom Snakeweed	GUSA2
Mormontea	EPVI
Granite Pricklygilia	PEOV

Vegetation Cover Levels Sufficient to Establish Re-Vegetation Success Standards:

Regarding threatened, endangered, or sensitive species within the operational area, Sarah Lindsey of the Division of Wildlife Resources responded to a request concerning these matters. Ms. Lindsey's letter is found in Appendix D stating that there are no records finding any of these species within the operation.

106.8 Depth to Groundwater, Overburden Material and Geologic Setting:

Groundwater:

Several water wells are located within proximity of the Beef Hollow Operation. The Beef Hollow Operation will extract sand, gravel, and ore material from the site. All mining practices will be done according to the mining plan and will not mine to an elevation lower than 4900 feet. In Appendix C you will find a map with water well locations and depths to groundwater below surface and individual drill logs of wells in the area. Ground water is found approximately 250 feet below the lowest mining area.

Overburden Material:

The average depth of 12 inches of topsoil is considered the overburden at Beef Hollow. After this layer of topsoil, young thin lava flows from the Oligocene period fuse with alluvial sands and gravels from the former Lake Bonneville. The overburden will be stripped and stored until used for reclamation.

Along the western area of the mine site overburden consists of approximately 6 inches of topsoil that will be stripped and stored along with approximately 1 ½ feet of weathered and fractured quartzite mixed with some collegial clay deposits. Depths of overburden have been encountered at 10 feet in some areas depending on the topography.

Geology of the Area:

Beef Hollow is located on the Western side of the Jordan River in the foothills of the Traverse Mountain Range. This area is known as one of the most complex geological areas in the State for its various different fault types, formations and past activity. For reference please see Utah Geological Survey Map #208, the Jordan Narrows Quadrangle located in the maps section of the NOI. The UGS map identifies the materials to be lacustrine deposits over volcanic rocks of the west Traverse Mountains and is identified as Upper Pleistocene/Oligocene in age. The volcanic rock is planated by wave action and partly concealed by a discontinuous veneer of lacustrine deposits. These lacustrine deposits are sorted in layers down slope from course to fine grained, and where absent, alluvial fan surfaces are covered with angular and sub-angular volcanic boulders. Visually one is able to see the preserved shorelines left from Lake Bonneville. These deposits are fine to coarse grained sand and silt with minor gravel, typically thick bedded and well sorted. These particular deposits can be concealed also by loess veneer and volcanic clasts from lava flows.

The Beef Hollow Thrust Fault is situated on the southern boundary of the Beef Hollow Operation and creates a large ravine known as Beef Hollow, separating public land from Camp Williams Military Base. The Fault exposes evidence of the Bingham Mine Formation (Upper Pennsylvanian). Running perpendicular to the Beef Hollow Thrust Fault are various unidentified normal faults that have created a boundary line between different materials. One material consists of interbedded, brown weathering, fine grained ortho-quartzite. The material is light brown and gray when weathered from surface elements. Jordan and commercial limestone that are exposed on the eastern edges of the Jordan Narrow Quadrangle are not exposed here because they have been overridden by the Beef Hollow Fault Thrust.

106.9 Location and Size of Ore and Waste Stockpiles, Tailings and Treatment Ponds, and Discharges:

Waste Stockpiles, Tailings, Treatment Ponds, and Discharges:

Ore at Beef Hollow will be considered as a sellable product. Topsoil stripped in mining areas will be stockpiled for reclamation purposes. The existence of waste stockpiles, tailings, treatment ponds, and discharges will not be part of the mining plan. All materials mined will be processed for construction grade aggregate. A list of stockpiles and estimated maximum volume of each can be found in Table 4 below.

Table 4: Estimated Stockpile Volumes and Types of Materials:

Type of Material	Diameter	Estimated Maximum Stockpile Volume
A-1 – a 3" minus granular borrow	3"	55,000
1 ½" state spec. UTBC (road base)	1 ½"	55,000
4" in. stabilization rock	4"	40,000
Bedding sand	3/8"	10,000
2 ½" railroad ballast	2 ½"	25,000
½" to 1 ½" drain rock	2"	25,000

Water Storage/Treatment Ponds:

Water for dust suppression will be obtained from an off-site million gallon water tank owned and operated by the Jordan Valley Water Conservancy District. Water will be metered to the Beef Hollow Operation by pipeline to a 10,000 gallon water storage tank. It is not anticipated any water used for dust suppression will run off the site.

Any storm water from the site will be collected in storm water retention ponds or within the confines of the Operation. The ponds will be located along the northern and eastern areas of the mine and will be designed to 10 year, 24-hour storm event . Storm water retention ponds will be discussed in more detail in 109.4.

Discharges:

Storm water discharges are likely from this Operation. Grading, check dams, and sediment ponds will be installed to meet Utah storm water quality requirements. An UPDES Storm Water Permit has been obtained for the site.

R647-4-107 Operation Practices:

As required in R647-4-107, Operations will conform to the required practices.

R647-4-108 Hole Plugging Requirements:

It is not anticipated Staker Parson Companies will conduct any exploratory drilling on site. If drilling for any reason other than blast hole drilling is planned on site, Staker Parson Companies will notify DOGM and the following procedure will be followed:

Timeline:

Drill holes shall be properly plugged as soon as is practical. At no time will drill holes be left unplugged for a time period exceeding thirty days unless approved by DOGM.

Surface Plugging of Drill Holes:

The plugging of drill holes shall be accomplished by setting a non-metallic permaplug at a minimum of 5 feet below the surface, or returning the cuttings to the hole and tamping the returned cuttings to within 5 feet of ground level. The hole above the permaplug or cuttings will be filled with a concrete plug. If the concrete plug is to be left in place. If the concrete casing is left in place, then a concrete plug may not be required if a permanent cap is secured on top of the casing.

Holes that Encounter Water, Oil, Gas, and or other Migratory Substances:

Holes of this nature with a surface diameter of 2 ½ inches will require the Operator to notify DOGM and also require plugging of the hole below the surface to prevent migration of any liquids. Holes that encounter water will be plugged as outlined below.

If Artesian Flow:

If artesian flow is encountered during or upon cessation of drilling, a concrete plug will be placed to prevent water from flowing between geologic formations and at the surface. The concrete mix will consist of API Class A or H concrete, with additives as needed, and will weigh at least 13.5 lb/gal. It will be placed under the supervision of a person qualified in proper drill hole concreting or artesian flow. The artesian bore holes will be plugged as put forth prior to removal of drilling equipment from the operation site. If the surface owner(s) of the land affected desire to convert an artesian drill hole into a producing and /or monitoring well, then such party must notify DOGM in writing and assume ultimate responsibility for the plugging of such holes.

Holes that Encounter Meaningful Amounts of Non-Artesian Water:

These holes shall be plugged by placing a 50 foot concrete plug immediately above and below the aquifer(s) of filling from the bottom up (through drill hole casing) with a high

grade bentonite/water slurry mixture. The slurry shall have a Marsh Funnel viscosity of no less than 50 seconds per quart prior to the adding of any cuttings.

R647-4-109 Impact Assessment:

109.1 Surface and Groundwater Systems:

Surface Water:

No perennial streams or intermittent water have been or will be impacted by mining operations. When stormwater impacts processing areas the water will be retained on-site if possible or directed to a sediment pond via rock check dams prior to discharge. Stormwater from undisturbed areas located on the Beef Hollow will be left to stay in natural drainages as much as possible. Stormwater run-on will be managed as much as possible in natural drainage areas. Stormwater controls for the site have been designed to handle a 10-year 24 hour rain event. The site storm water pollution prevention plan (SWPPP) is located onsite in the scale house for review. A copy of the storm water permit (NOI) is located in Appendix E. Also included for review in Appendix H are Stream Alteration Applications and Permit for work done in Wood Hollow while CMC had rights to the property.

Ground Water:

Existing well data of the surrounding area finds the level of ground water to be several hundred feet lower than any planned excavation at the operation.

Although very unlikely, mining impacts to ground water could include: fuel and chemical storage, concrete operations, and porta-poties.

All fuel and chemicals will be stored in approved tanks and containers. All tanks and containers will be placed inside containments able to hold at least 110% capacity of the tank and/or container. Spills will be cleaned up immediately and reported to the Division of Environmental Response and Remediation (DERR) if the spilled amount is 25 gallons or greater. Porta-poties will be maintained on a regular basis and staked down. Concrete washout will be handled in approved designated areas.

109.2 Wildlife Habitat and Endangered Species:

Table 5: Salt Lake County Federal Threatened and Endangered Species:

Common Name	Scientific Name	Status*	Present at Beef Hollow
Ute Ladies'-Tresses	Spiranthes Diluvialis	T	No
June Sucker	Chasmistes Liorus	E	No

Yellow Billed Cuckoo	Coccyzus Americanus	C	No
*T (Threatened) E (Endangered) C (Candidate of Extirpation)			

These species were identified within the Salt Lake County Area. There is a Division of Wildlife Resources Data Center map located in Appendix F identifying there are no Endangered Plant Species located within the Beef Hollow boundaries.

In June 2009, Sarah Lindsey, information Manager of the Utah Natural Heritage Program indicated that no records of any threatened, endangered, or sensitive species are existing in the central database of the Division of Wildlife Resources.

109.3 Projected Impacts of the Mining Operation on Existing Soil Resources:

Topsoil storage areas have been designated for the purpose of storing suitable overburden materials for reclamation use. Topsoil will be stored there until it is used for reclamation purposes. Topsoil may also be acquired from various areas on site that contain several feet of soil that has been naturally deposited there. Topsoil storage sites will have slopes no greater than 1.5H:1V. Topsoil will also be stored to the sides or on the aprons of operational areas. This is done for access, cost effectiveness, and erosion control. New topsoil storage piles will be seeded in the fall to minimize erosion of the piles and promote organic content. A seed mixture of primarily native grasses recommended by Granite Seed Company will be spread at a rate of 12 lbs/acre pure live seed (PLS).

Table 6: Seed Mixture for Topsoil Storage Stockpiles and Berms:

Seed Species		Pure Live Seed (PLS) lbs/acre
Scientific Name	Common Name	
Agropyron Cristatum	Crested Wheatgrass	1.0
Elytrigia Intermedia	Intermediate Wheatgrass	3.5
Poa Sandbergii	Sandberg Bluegrass	3.0
Festuca Ovina	Sheep Fescue	1.0
Medicago Sativa	Alfalfa	1.0
Total		9.5

109.4 Slope Stability, Erosion Control, Air Quality, Public Health and Safety:

Slope Stability:

The Beef Hollow operation will mine the land creating milder and gentler slopes. No slopes greater than 2H: 1V will exist in areas operated by the Operator. The excavation procedures will be performed to follow a grading plan that requires these slopes for structural support and safety. The Operator will monitor operations to see that dangerous conditions are corrected and the Mine Safety and Health Administration (MSHA) will perform at least 1 inspection per year to confirm slopes are being maintained in a safe manner.

Erosion Control:

There are several defined drainages running south to north from existing slopes in the operational area. All efforts will be made to minimize disturbances and disruption of these natural water drainages. Where operations and disturbance do occur at Beef Hollow, The Operator will employ Best Management Practices (BMP's) to help control erosion and sedimentation.

The Operator will conduct its mining operations to manage stormwater flows. Stormwater flowing onto the site will be channeled to existing drainages. Stormwater from on site will be managed by check dams and sediment ponds. Limited areas will be exposed to prevent unnecessary creation of erosion and sedimentation.

Air Quality:

The Operator currently holds an Approval Order (AO) DAQE-AN0142450001-10 with the State Division of Air Quality. This permit gives conditions of operation in terms of tons, tons per hour, operational practices and permitted equipment. The AO gives conditions on allowable fugitive and point source dust emissions. Fugitive dust generated from the haul roads will be controlled by use of Mag-Chloride. Mag-Chloride will be applied at least 2 times per year to control the fugitive dust. The entrance to the scale house is paved with asphalt.

Public Health and Safety:

The Operator is responsible for taking the appropriate measures to eliminate hazards affecting public health and safety. The measures to be taken are:

- Gates/Property Restrictions – A gate will be placed at both entrances to restrict access to the operation. The gates will be painted with "caution yellow". A canal exists on the northern boundary of the operation and Camp Williams is to the south of the operation. The canal and Camp Williams will restrict any unauthorized access.

- Signs – Speed limit, processing equipment, facility, and building signs will be used to properly identify all structures and mining operations. The following warning signs will be used on site:
    - No Trespassing
    - No Un-Authorized Personnel
    - Private Property
    - All Visitors Must Report to Scale House
    - Yield to Heavy Equipment
    - Personal Protective Equipment Must be Worn at All Times
- Safety Program – No person or guest is allowed on site unless they have been "Site Specific Trained" by an authorized person. The Operator will follow all Company specific safety best practices and training. The Operator will follow the National standards set forth for blasting and vibration.
- Trash, Scrap Metal, Wood, and Extraneous Debris – All waste materials will be disposed of in accordance to local conditions. All waste materials will be stored in approved containers. The site will be maintained in an orderly manner.
- Drill Holes – The only drill holes on site will be for blasting and they will be handled as set forth in R647-4-108.
- Deleterious or Potentially Deleterious Materials – Fuel tanks will be placed in containments and chemicals will be stored according to manufactures recommendations. Fuel and chemicals will be placed in specified locations and inspected on a regular basis for leaks.
- Used Lubricants – Used or spent lubricants will be picked up by a certified recycler or handled and transported by the Operator personnel.
- Public Access Point – The main entrance to the facility will be maintained in a safe manner.

109.5 Actions to Mitigate any Impacts:

Bighorn Archaeological Consultants, LLC has completed a cultural resource inventory (See Appendix B) of the Beef Hollow Large Mine near Camp W.G. Williams Military Reservation in Salt Lake County, Utah. The project area covered approximately 882 acres and was completed at the request of the JBR Environmental Consultants, Inc. Examination of the project area resulted in the discovery of no new cultural sites. However, one isolated find and one previously recorded site (42SL646) was relocated but not updated. Bighorn Archaeological Consultants recommends a determination of No Historic Properties Affected for this area.

R647-4-110 Reclamation Plan:

110.1 Current Land Use and Post Mining Land Use:

Current land use consists of mining and aggregate processing, and landscape boulder extraction. Several existing roads are on site for mining access, and other operational access.

Post mining land use will be kept to the uses prior to mining, which consisted of grazing and wildlife habitat. A second plan of post mining land use has been suggested referencing residential and commercial uses.

110.2 Reclamation of Road, High Walls, Slopes, Leach Pads, Dumps, Etc.:

Roads:

Currently there are several miles of roads that exist at the site. The roads have been used by other operations in the past and by the public. The Operator is planning on maintaining and improving roads at this facility during operation. A new haul road running along the southern boundary is currently being built for better access to reserves on the west end; the current main haul road and future main haul road will not be reclaimed. The Operator will reclaim all other ancillary roads within the mining boundary when operations cease at this site. The roads will be ripped and seeded. Upon completion of mining operations, the land owner(s) may want to retain and maintain existing road(s) within the mining boundary. If this is the case the land owner(s) will be required to request in writing with DOGM to assume responsibility and control of the road(s).

Highwalls:

All highwalls will be left at no greater than 2H: 1V slopes.

Slopes and Floors:

The slopes at Beef Hollow will have various final slopes, but not to exceed 2H: 1V. Slopes will consist of undulating and varying mild sloped hills potentially creating areas for residential buildings. Slopes and floors will have 12 inches of topsoil placed on them, ripped and seeded. Upon cessation of operations, the floors will have a topsoil layer placed on them, ripped and seeded.

Impoundments, Pits, and Ponds to be Left:

Water control structures such as ditches and ravines used to channel water in a natural manner will remain in place after reclamation. Rock check dams, sediment ponds and other stormwater controls will be reclaimed. Culverts will be left in place for natural water conveyance. Currently there is only one culvert (see Figure 8) on the property.

Stormwater sediment ponds located on site will be back filled and graded to blend into the surroundings. This work will be the last area reclaimed to minimize the chance for off-site sedimentation. The area will be prepared and seeded as part of the mining floor above.

Drainages:

Most drainages on site are still in the natural state. The Operator will limit the amount of disturbance to natural drainage areas. Sediment control basins have been constructed to help control sedimentation from the off the facility.

Dumps, Shafts, Adits, and Leach Pads:

There will be no dumps, shafts, adits, and/or leach pads created during mining. Thus none of these features will need to be reclaimed.

Drill Holes:

If drilling occurs (other than those required for blasting), holes will be properly plugged and sealed as required in Section R647-4-108.

110.3 Surface Facilities to be Left:

All ditches, culverts and ravines important to the natural movement of water will remain after reclamation. All of the structures listed below in the Surface Facilities to be Reclaimed Table (Table 7) will be removed. All portable facilities and can be removed by tractor trucks to other locations.

Table 7: Surface Facilities to be Reclaimed:

Surface Facilities to be Reclaimed		
Structure	Dimensions (feet)	Qty.
Jaw Crusher	12 x 40 x 14	2
Triple Deck Screens	12 x 40 x 12	4
Cone Crushers	12 x 40 x 12	2
Radial Stackers	3 x 100	4
Conveyors	3 x 70	12
Scale House	32 x 8 x 10	1
Scales	10 x 110	1

Fuel Tanks	10,000 gallon tanks	3
Water Tank	10,000 gallon tank	1
Concrete Slab	550 x 40 x 8"	1
Concrete Slab	145 x 32 x 8"	1
Concrete Slab	161 x 20 x 8"	2
Concrete Slab	154 x 17 x 8"	1
Concrete Slab	125 x 20 x 8"	1
Concrete Slab	127 x 17 x 8"	1
Concrete Slab	137 x 23 x 4"	1

Total acreage for buildings, structures, and surface facilities is 10 acres. All facilities will be demolished or removed as they are portable equipment. Concrete from the scales will be buried on-site. The concrete slabs will be broken up and left onsite. The broken up slabs will then be covered by 3 feet of common fill and an additional 1 foot of topsoil above the common fill. The rest of the equipment will be moved to other sites.

110.4 Treatment, Location, and Disposition of Deleterious Material:

Potentially hazardous materials resulting from demolition (including Asbestos Containing Material-ACM) will be identified, characterized, and remediated by licensed contractors. Hazardous materials will be disposed of according to Resource Conservation and Recovery Act (RCRA) rules. All tanks will be taken "Out of Service" and removed from the property. All conveyors, crushers, screens, and other ancillary facilities associated with mining and processing of aggregate will be removed upon reclamation.

110.5 Re-Vegetation Planting Program and Topsoil Re-Distribution:

Compacted areas will be will be ripped and/or scarified on the contour to prepare for topsoil.

Topsoil Placement:

Topsoil with the appropriate quantities (See Section 106.5 for analytical results of tested topsoil)of organic matter will be spread on the disturbed areas by equipment. Topsoil depth will be approximately 12 inches on disturbed areas. Marked lathe will be used to guide dozer operations to the correct topsoil depth. Topsoil stockpiled on the aprons of

the disturbed areas will also be used for coverage. All surfaces will be scarified along the contour with a road grader to assure mixing of the soil and manure (if required) to create a consistent textured soil and a roughened surface. Redepostion of soils during reclamation will be spread at a depth of 12 inches.

Seed Mixture:

The following is the proposed seed mixture for the Beef Hollow Reclamation Plan: See Table 8.

Table 8: Reclamation Seed Mix for the Beef Hollow Facility:

Common Name	Species Name	Rate lbs/ac (PLS)
Blue Bunch Wheatgrass	Agropyron spicatum	2.0
Western Wheatgrass	Agropyron smithii	2.0
Basin Wildrye	Elymus cinereus	2.0
Intermediate Wheat Grass	Agropyron intermedium	2.0
Sandberg Blue Grass	Poa secunda	0.1
Sheep Fescue	Festuca ovina	1.0
Western Yarrow	Achillea lanulosa	0.1
Ladak Alfalfa	Medicago sativa	1.0
Yellow Sweetclover	Melilotus officinalis	0.5
Palmer Penstemon	Penstemon palmerii	0.5
Lewis Flax	Linum lewisii	1.0
Pacific Aster	Aster chilensis	0.1
Forage Kochia	Kichia prostrate	0.5
Mountain Big Sagebrush	Artemisia tridentate vaseyana	0.1
White Stem Rabbitbrush	Chrysothanmus nauseosus albicalus	0.2
Total		13.1

This seed mixture was recommended by the Utah Division of Oil, Gas and Mining for this specific area. 13.1 lbs./ac (PLS) will be used.

Seeding Method:

The seed will be broadcasted with a conventional spreader over the topsoil during the fall or spring seasons. The Operator will leave a rough surface for the collection of seed and water which will improve growth. The Operator will make a conscious effort to do the reclamation during the fall season.

Fertilization:

Prior to spreading any topsoil or topdressing, stockpiles and supplement topsoil will be tested for organic matter. If test results indicate low levels of nutrients, composed manure will be spread at 10 tons per acre and mixed with the topsoil. Soil amendments will be approved by DOGM prior to application.

Other Re-Vegetation Procedures:

Where disturbed areas exist and will not be part of the current or future mining area, these areas will be seeded to reduce weed growth.

R647-4-112 Variance:

No variances requested.

R647-4-113 Surety:

Currently, a surety bond in the amount of $3,144,452.00 is in place for the current mining operation. Surety calculations have been performed and are located in Appendix G.